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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,113	03/16/2004	Satoshi Seo	12732-220001 / US7048	9191
26171	7590	08/25/2006	EXAMINER	
FISH & RICHARDSON P.C.			GARRETT, DAWN L	
P.O. BOX 1022			ART UNIT	PAPER NUMBER
MINNEAPOLIS, MN 55440-1022			1774	

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/801,113

Applicant(s)

SEO ET AL.

Examiner

Dawn Garrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3-16-2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This Office action is responsive to the response to the election of species requirement filed August 11, 2006. Applicant elected the species of claim 4 which includes a host material according to formula (7) wherein an aryl group represents each of R1 to R3 and formula 8 wherein a lower alkyl group represents R1, R4 and R5 and a hydrogen atom represents each of R2 and R3. Applicant indicated claims 4 and 9-24 read on the elected species. It also appears claims 1-3 are generic to the elected species. Claims 1-4 and 9-24 are under consideration. Claims 5-8 are withdrawn as non-elected claims.

#### *Drawings*

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because portions of the drawings are handwritten and consequently not clear. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

#### *Claim Rejections - 35 USC § 103*

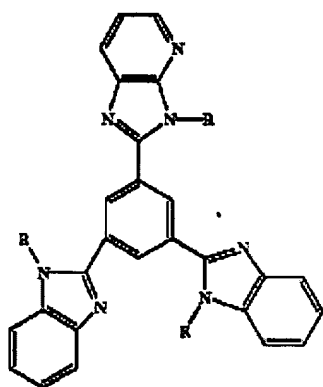
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 and 9-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US 2002/0055014 A1) in view of Xie (US 2003/0215667 A1). Okada et al.

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discloses light-emitting devices comprising a pair of electrodes formed on a substrate, and organic compound layers including one with a heterocyclic compound (see abstract). Okada et al. discloses as the heterocyclic compound the following compound with regard to the present "host compound":

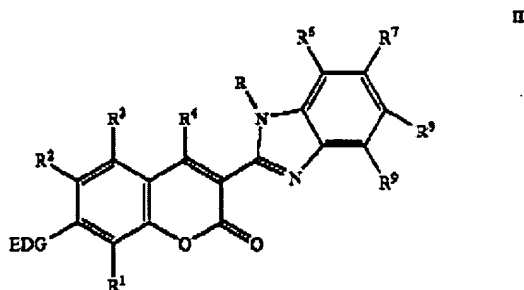


246 (R = phenyl)  
247 (R = 3-methyl phenyl)  
248 (R = 4-tert-butylphenyl)  
291 (R = 2-methylphenyl)  
294 (R = 6-quinolyl)

(see page 70, second column).

Okada et al. further teaches the light emitting layer may comprise coumarin derivatives (see par. 223) with regard to the independent claims and claim 17. Okada et al. fails to teach specifically the coumarin derivative species under consideration. Xie teaches in analogous art coumarin derivatives useful as dopants in the luminescent layer of an electroluminescent device (see abstract). Xie teaches the species of coumarin derivative currently under consideration:

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[0026] Wherein R is hydrogen, alkyl of from 1-24 carbon atoms, aryl, heteroaryl or carbocyclic systems;

[0027]  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  are individually alkyl of from 1 to 20 carbon atoms, aryl or carbocyclic systems;

[0028] EDG is hydrogen, alkyl group of from 1-24 carbon atoms, aryl group of from 5-24 carbon atoms, or electron donating groups, more typically are:



[0029] Wherein:  $R^{10}$ ,  $R^{11}$  and  $R^{12}$  are individually alkyl of from 1 to 20 carbon atoms, aryl or carbocyclic systems;  $R^{11}$  and  $R^{12}$ ,  $R^{11}$  and  $R^{12}$ , and  $R^{12}$  and  $R^{12}$  taken together can form ring systems, such as piperidine, julolidine, or tetramethyljulolidine.

(see page 2, par. 25-29).

It would have been obvious to one of ordinary skill in the art to have selected the coumarin derivative according to Xie for the Okada et al. device, because Okada et al. teaches coumarin derivatives may be incorporated into the light emitting layer. With regard to claim 9, Okada et al. teaches devices are used for displays and displays are notoriously well known to be part of image reproduction devices, goggle type displays, cameras and cellular phones (see par. 5). With regard to claims 10 and 11, the positive electrode (anode) may be formed of a number of materials including indium tin oxide (see par. 218). With regard to claims 12-14, the negative electrode (cathode) may be formed of alkali metals and fluorides of Li among other materials (see par. 221). The thickness of the negative electrode (cathode) and positive electrode (anode)

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may be 10nm with regard to claim 15 (see par. 218 and 222). ITO (indium tin oxide) is particularly preferred for its transparency property per claim 16 (see par. 218). An electron transporting layer may be included per claims 18 and 23 (see par. 230). A hole injecting layer may be included per claims 19 and 24 (see par. 227). With regard to claim 20, the electron-injecting and the electron transporting layer are taught as having the function of blocking holes (see par. 230, fifth line of paragraph).

### *Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dawn Garrett  
Primary Examiner  
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